"MIGRATION TO THE WORKFORCE: AN ANALYSIS OF THE EARNINGS POTENTIAL OF RECENT COLLEGE GRADUATES"

Brian Noland
Penny Smith
Houston Davis
Erik Ness
Greg Schutz

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Theoretical Assumptions

- Funding concerns - investments/costs?
- Policy Nexus
  - Policy cannot be created in a vacuum
  - Keller 1985; Gordon 1992; Nettles 1995
- Human Capital Theory
  - Education increases the human capital stock of individuals, improves economic productivity, and contributes to societal betterment (Denison 1983; Walberg and Zhang 1998)

Human Capital Theory

- Kuzents (1955)
  - Inverted U-hypothesis
  - Estimates economic returns on investments in education.
- Average rates of return
  - Denison (1962) ~ HC accounts for 43% of national income growth
  - Barro (1997) ~ Increase of 1 year of education increases growth rate of GNP by 1%
  - Marin et al (1976) ~ Increase in educational attainment yields 10% decrease in income inequality
  - Sweetland (1996) ~ Each $1 investment in education leads to a 10% increase in individual wages rates

Benefits of Investments in Higher Education

Institute for Higher Education Policy (1998)

- Private social benefits
- Public social benefits
- Private economic benefits
- Public social benefits

This framework ensures a review of all benefits while recognizing that some benefits are not easily placed into one category, but rather contribute to multiple categories leading to the interdependency of public and private benefits and social and economic benefits.

Private Social Benefits

- Bowen (1977)
  - Non-monetary benefits of higher education are of primary concern of higher education. Benefits include: cognitive learning, emotional and moral development, and practical competence for family life, consumer behavior, leisure, and health.
- Greenwood (1997)
  - Parental attainment deters criminal behavior of their children, promotes lower levels of parental neglect/abuse; healthier children; greater educational and workforce achievement on the part of children as well as the parents, and improved socialization and health of children. Furthermore, children of college educated parents are more likely to pursue postsecondary education and reap "quality of life benefits" through increased personal and academic development.

Private Social Benefits

- Justiz (1994)
  - The ability to adapt to constantly changing technological advances is also tied to collegiate education. Individuals with such attributes contribute more to the development and dissemination of efficient technologies than less educated counterparts.
- Wolfe and Zuvekas (1997)
  - Additional schooling positively affects one's health, one's spouse's health, increases life expectancy, and lowers prevalence of severe mental illness.
  - The individual value of education is enhanced and reveals itself in generational transfer.

Public Social Benefits

- IHEP (1998)
  - Crime rates have been shown to decrease as the rate of education increases. Education is also the driving force in preparing citizens for participation in political, economic, and social aspects of their communities.
- National Center for Educational Statistics (1998)
  - Bachelor's degree holders were 40% more likely than high school graduates to be a member of a community organization, 28% more likely to have voted in national or state elections, and 90% more likely to have contributed money to a candidate or political cause.
  - Analysis of charitable giving of time and money reveals that 66% of those with some college and 77% of those with a bachelor's degree give and perform volunteer work. Only 45% of high school graduates and 22% of high school dropouts report philanthropic activities of this kind.

Public Social Benefits

- Greenwood (1997)
  - College graduates volunteer twice as many hours and donate 50 percent more of their income than high school graduates.
- Pascarella et al (1996)
  - Social cohesion and an appreciation for societal diversity represent the final and perhaps most important public social benefits from investments in higher education. Research has shown that students with high levels of exposure to diverse opinions and issues display increases in their thinking skills, intellectual curiosity, and motivation.
- Noland, Lyons, and Davis (1999)
  - There is a great deal to be learned from being in new surroundings and learning amidst social differences. College is an essential period for gaining exposure to new ideas, cultures, and beliefs. If barriers of social awareness are ever to be lessened, higher education must provide the spark for this progress

Private Economic Benefits

- Leslie and Brinkman's (1988)
  - ”When all the benefits are included, the college attendance decision represents an investment and consumption choice almost without equal" (p. 68).
  - Formal education has a strong positive association with private earnings and public revenues, thereby making state appropriations to all levels of education much more of an investment than a cost. Not only are individuals who have gone to college employed at higher rates, they can expect to earn more as a result of this education.
- Pascarella and Terenzini (1991)
  - The receipt of a bachelor's degree provides citizens with approximately a 40 percent income advantage over those holding a high school diploma depending on occupations.

Private Economic Benefits

- NCES (1998)
  - In 1970 men with "some college" earned 10% more than men reporting to be high school graduates. By 1996, this figure had grown to 14%. Among women, the figure was 19% in 1970, but had grown to a 27% difference between "high school diploma" and "some college" by 1996.
- IHEP (1998)
  - In addition to higher earnings potential, college grads have higher savings levels, improved working conditions, and increased personal/professional mobility. This provides for enhanced flexibility and ensures a more productive and satisfied workforce. Rates of unemployment seem to echo the flexibility and options that are provided to those with educational credentials. For the U.S. population 25 years and older, unemployment rates by educational attainment level show that their employment likelihood increases proportionally with degree attainment.

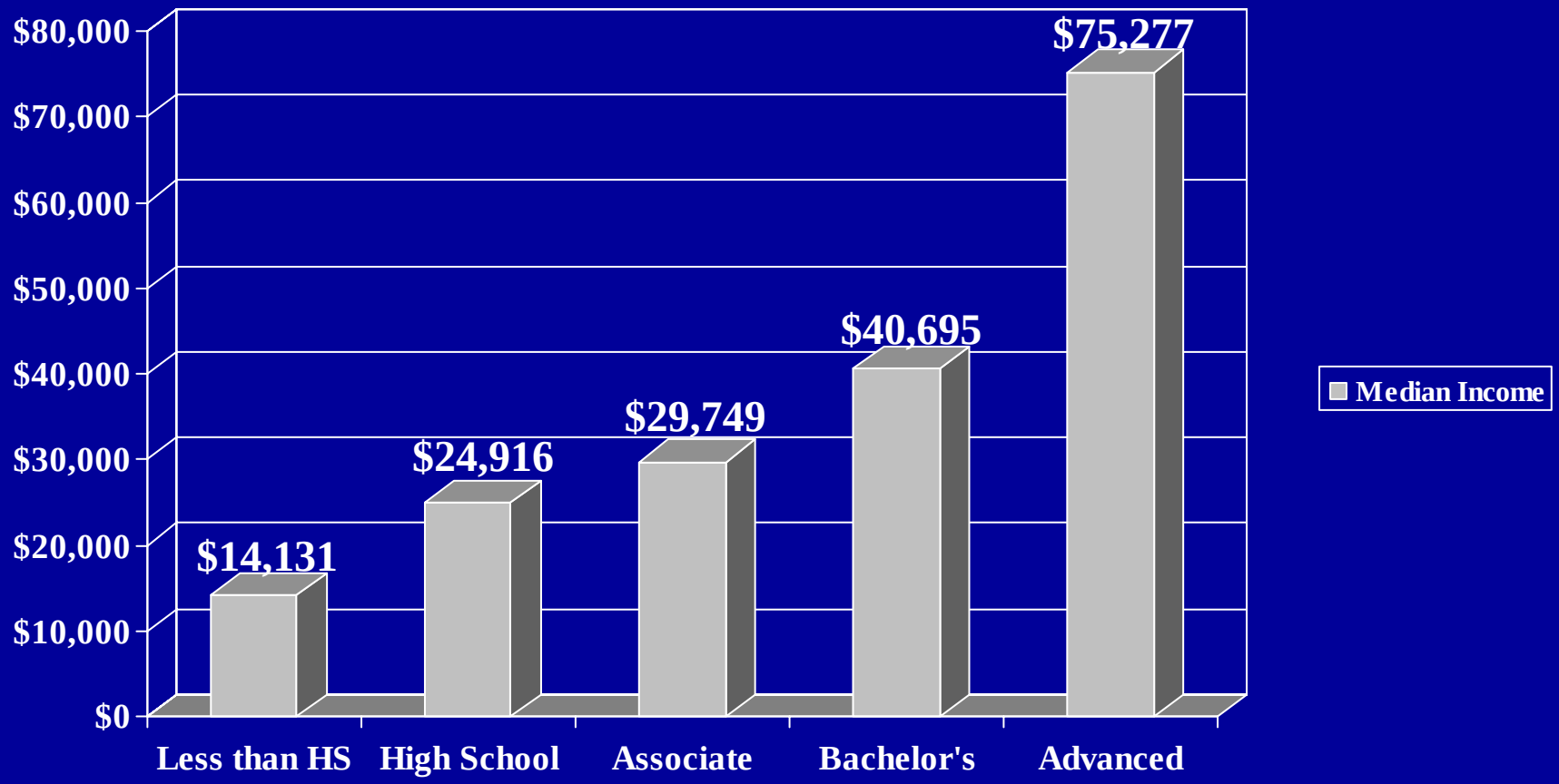
Public Economic Benefits

- Leslie and Brinkman (1988)
  - Prime mover of national income growth
  - Returns in increased tax revenues. Research has demonstrated that individuals with at least some college education paid 71% of all federal taxes, even though those same individuals account for only 49% of all households (IHEP 1998).
- Ukpolo (1999)
  - For each dollar invested in an individual's higher education, society may expect a return of $9.30 and the state can expect to get back $1.04 in tax revenue.
  - Appropriations to higher education are societal investments, as clear returns are produced from initial budgetary outlays.
  - Increased educational attainment levels result in a greater rate of overall consumption of goods and services. Levels of EA were shown to influence greater spending on items such as housing, food, and transportation.

Public Economic Benefits

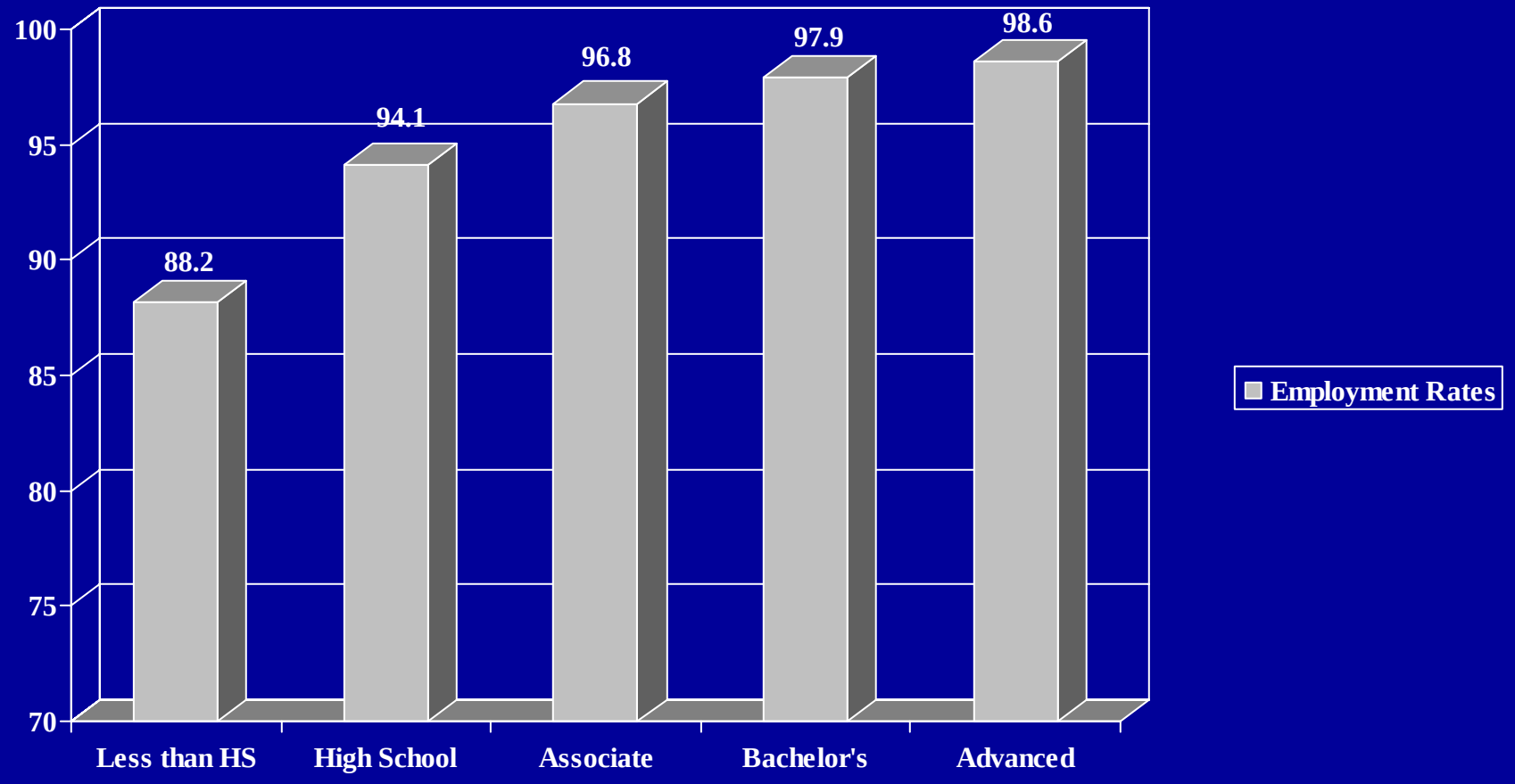
- IHEP (1998)
  - A final public economic benefit to investment in education is a decreased reliance on government financial support. Participation in programs such as welfare, food stamps, medical assistance, and housing assistance decreases as the level of education attended increases.
  - 25- to 34-year olds who completed 9-11 years of high school were three times more likely than high school graduates to receive income from public assistance programs. For those persons who completed the bachelor's degree, the percentage of participants in public assistance dropped to 0.4%.
- Wolfe and Zuvekas (1997)
  - Higher education levels decrease the likelihood that eligible persons will receive disability transfers.

Financial Benefits to the Individual



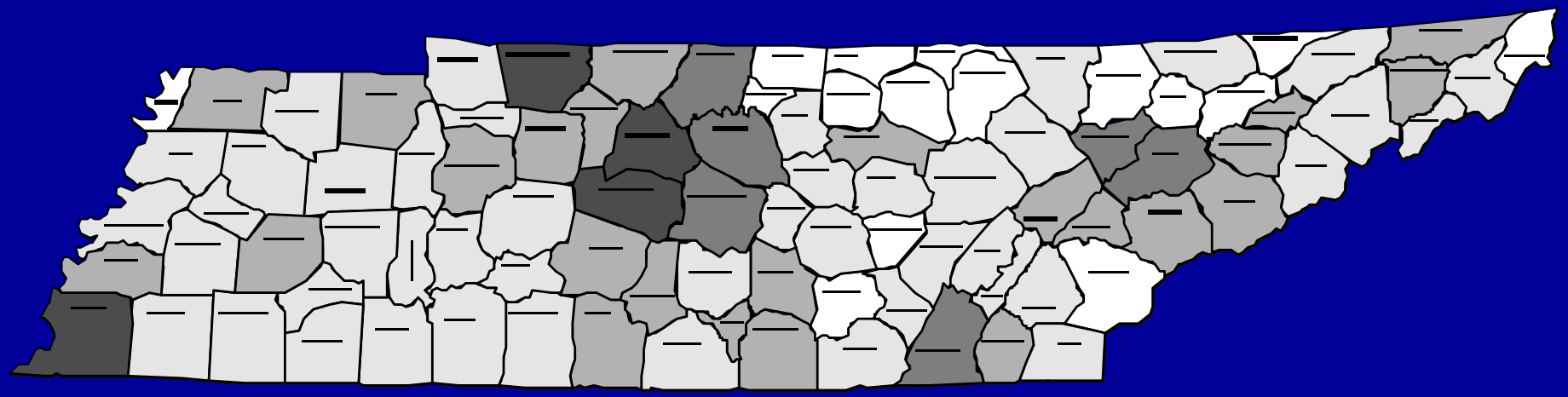
Source: U.S. Census Bureau, Current Population Survey, March 1998

Employment Benefits to the Individual



Source: U.S. Census Bureau, Current Population Survey, March 1998

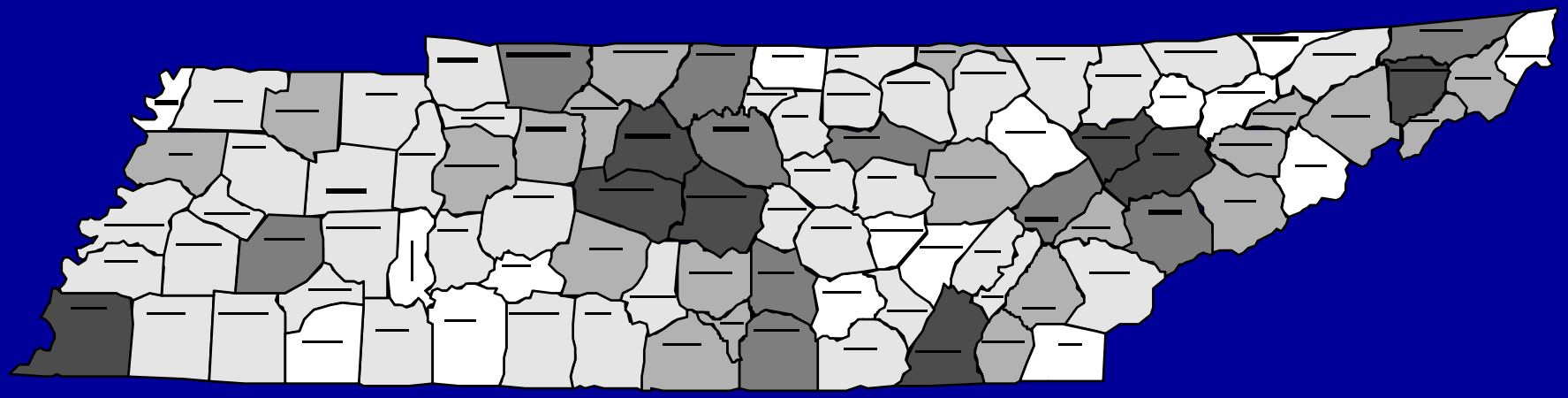
Percent of Population with a High School Degree, 1997



- Under 50%
- 50-59.9%
- 60-69.9%
- 70-74.9%
- 75% and above

Average for the State of Tennessee in 1997	**76.9**
National Average	**82.8**

Percent of Population with a Bachelor's Degree, 1997



Under 6%

6-8.9%

9-12.9%

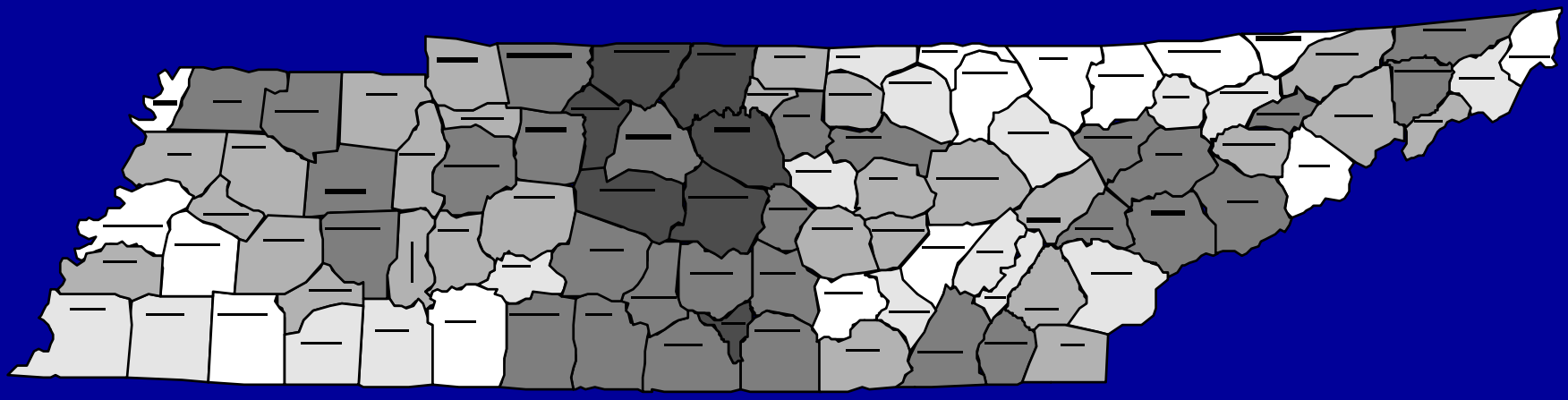
13-17.9%

18% and above

Average for Tennessee in 1997
16.9%

Average for U.S. in 1997
24.4%

Percent of Population in Poverty, 1995



Above 20%

17-19.9%

14-16.9%

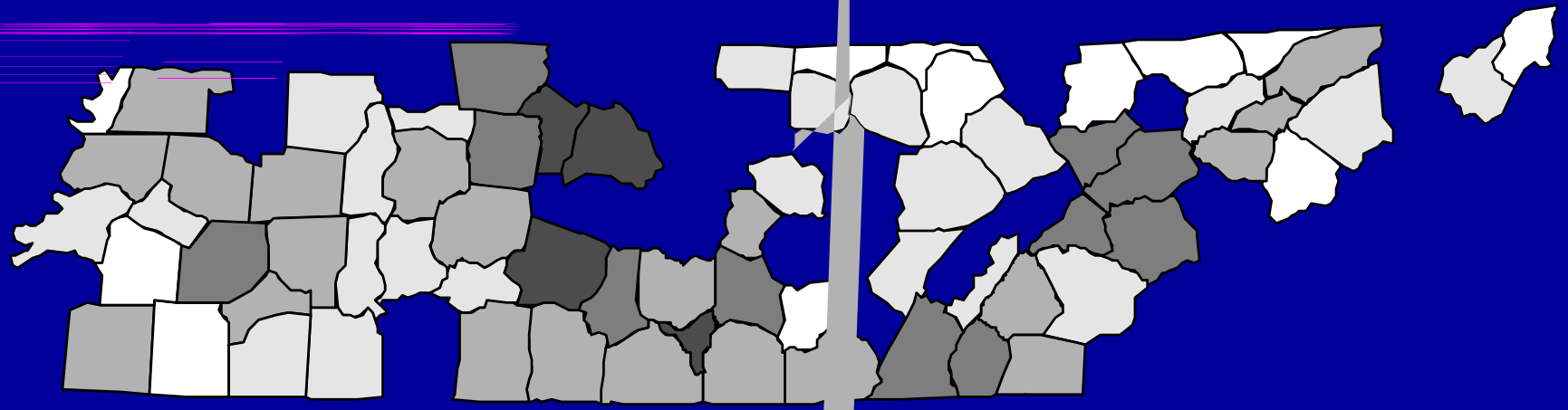
10-13.9%

Below 10%

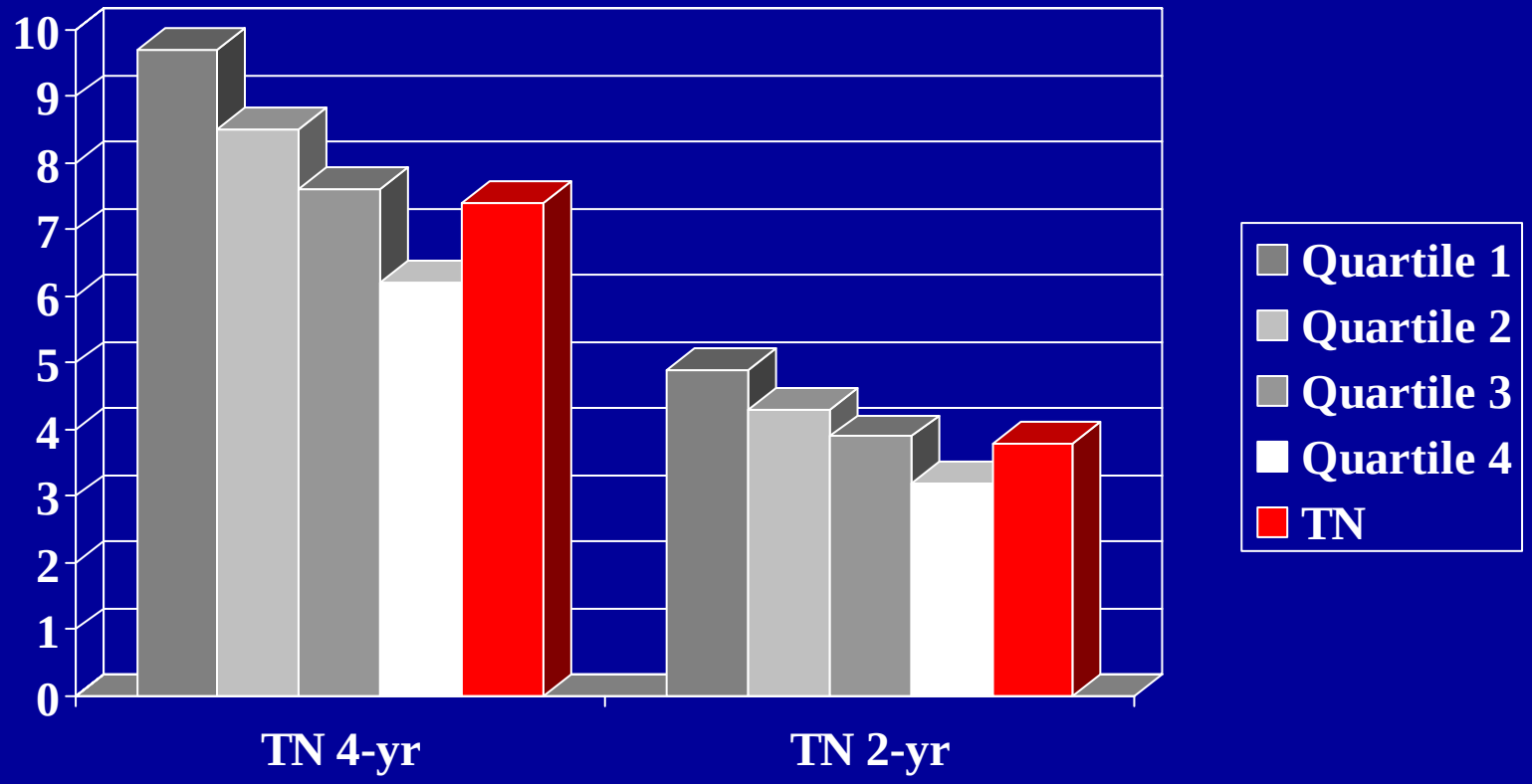
Examples of Poverty Thresholds in 1995

Family of four (2 children under 18) - **$15,455**

Family of five (3 children under 18) - **$18,643**

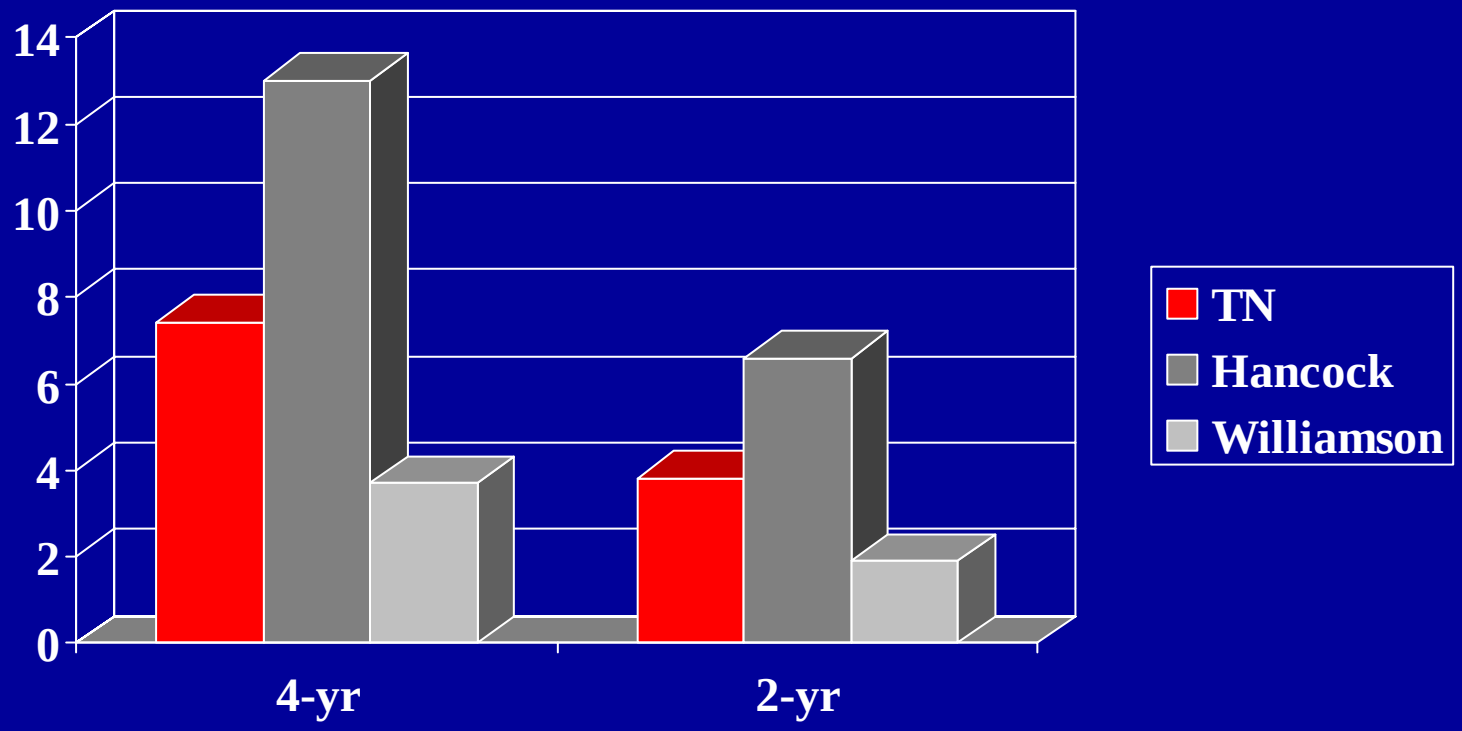


Fees as a Percentage of Median Household Income Difference Between Counties (1998-99)



Fees as % of Med. Household Income		
	4-yr	2-yr
Quartile 1	9.7%	4.9%
Quartile 2	8.5%	4.3%
Quartile 3	7.6%	3.9%
Quartile 4	6.2%	3.2%
TN	7.4%	3.8%

Difference Between Counties (1998-99)



Fees as % of Med. Household Income		
	4-yr	2-yr
TN	7.4%	3.8%
Hancock	13.0%	6.6%
Williamson	3.7%	1.9%

Methodology

- Statewide 1997-98 graduates file matched to UI data
- California, Florida, North Carolina, Texas and Washington have measured post-college earnings utilizing UI wage records (Sanchez and Laanan, 1997).
- Florida Education and Training Placement Information Program.

Methodology

- Advantages to utilizing this type of data.
  - First it is advantageous because the records already exist and it is inexpensive.
  - UI data records are also void of non-response and self-report limitations of data collection
- Disadvantages to utilizing this type of data.
  - Long delay in the availability of data. Each quarter's earnings are not available until three to six months later.
  - UI records do not indicate employment rates but only the number of graduates who had matched wage records according to their social security numbers.
  - Data is limited because they do not reflect if employment is related to the college training attained.

Results

Bachelor's Degree Recipients (97-98)		
Less Than 25 Years Old	8,146	59%
25 to 34 Years Old	4,263	31%
35 Years and Older	1,416	10%
Total	13,825	

1997 total graduate population: 27,432

Successful match: 50.4%

Earnings by Degree Level

Earnings Second Year After Graduation		
Bachelors Degree	9,941	$23,281
Masters Degree	3,078	$33,907
Doctoral Degree	180	$40,636

Earnings by Gender

Gender Inequities			
Bachelors	Female	5,923	$22,237
	Male	4,018	$24,821
Masters	Female	2,051	$31,129
	Male	1,027	$39,454
Doctoral	Female	100	$40,483
	Male	80	$40,826

Earnings by Race

Racial Inequities - Bachelors		
Asian/Pacific Islander	145	$21,295
American Indian/Alaska Native	21	$24,130
Black/Not Hispanic	1,321	$22,875
Hispanic	66	$22,471
White/Not Hispanic	8,379	$23,382
Racial Inequities - Masters		
Asian/Pacific Islander	95	$31,498
American Indian/Alaska Native	9	****
Black/Not Hispanic	299	$31,655
Hispanic	23	$30,847
White/Not Hispanic	2,652	$34,310
Racial Inequities - Doctoral		
Asian/Pacific Islander	11	$40,148
Black/Not Hispanic	17	$52,316
Hispanic	4	****
White/Not Hispanic	148	$38,974

The income/age relationship

Effect of Years Experience and Education on Earnings			
Bachelors	Less than 25 Years Old	5,852	$21,999
	25 to 34 Years Old	3,038	$24,399
	35 Years and Older	1,051	$27,188
Masters	Less than 25 Years Old	382	$29,565
	25 to 34 Years Old	1,705	$32,162
	35 Years and Older	991	$38,582

Earnings by BA related major

1997-98 Graduates - Earnings After 2 Years			
Degree	**Discipline**	**Total Matched**	**Average Earnings**
BA	Foreign Languages & Literature/Letters	64	$16,652
BA	English Languages & Literature/Letters	395	$17,249
BA	Psychology	288	$17,683
BA	Social Sciences & History	443	$17,961
BFA	Visual & Performing Arts	158	$18,656
BA	Multi/Interdisciplinary Sciences	72	$18,871
BM	Visual & Performing Arts	75	$18,982
BA	Visual & Performing Arts	90	$20,245
BA	Communications	130	$21,381
BBA	Business Management & Administrative Services	942	$28,257

Earnings by BS related major

1997-98 Graduates - Earnings After 2 Years			
Degree	**Discipline**	**Total Matched**	**Average Earnings**
BS	Biological Sciences/Life Sciences	402	$15,765
BS	Psychology	340	$16,292
BS	Physical Sciences	107	$17,255
BS	Visual & Performing Arts	173	$17,907
BS	Social Sciences & History	248	$18,644
BS	Agricultural Sciences	65	$18,852
BS	Home Economics, General	158	$18,974
BS	Parks, Recreation, Leisure & Fitness Studies	158	$19,500
BS	Communications	221	$19,683
BS	Liberal Arts & Sciences, General Studies & Humanities	102	$20,692
BS	Protective Services	187	$21,009
BS	Education	210	$22,250
BS	Mulit/Interdisciplinary Sciences	509	$23,868
BS	Health Professions & Related Services	161	$24,717
BS	Business Management & Administrative Services	179	$26,580
BS	Engineering-Related Technologies	105	$31,648
BS	Computer & Information Sciences	104	$33,246

Earnings by specialized major

1997-98 Graduates - Earnings After 2 Years			
Degree	**Discipline**	**Total Matched**	**Average Earnings**
BSC	Communications	134	$18,379
BSED	Parks, Recreation, Leisure & Fitness Studies	146	$18,507
BSAG	Agricultural Sciences	143	$18,861
BSHE	Home Economics, General	138	$18,903
BSW	Public Administration & Services	98	$19,270
BSED	Education	170	$24,605
BSED	Multi/Interdisciplinary Sciences	306	$25,710
BSBA	Business Management & Administrative Services	631	$28,306
BSCE	Engineering	110	$29,530
BSN	Health Professions & Related Services	593	$31,955
BSPT	Health Professions & Related Services	91	$37,559
BSME	Engineering	111	$37,780
BSEE	Engineering	67	$39,693

Conclusions

- Income earnings constant across institutional type
- Data problems
- Political implications
- Costs/benefits analysis of investments in higher education
- Future research directions

Questions?